

City of Wadsworth

Connected Grid Project

Abstract

The City of Wadsworth's (City) Connected Grid Project involves system-wide deployment of advanced metering infrastructure (AMI) and targeted installation of in-home displays, home area networks, programmable communicating thermostats, load control devices, and distribution automation equipment. The smart meters provide two-way communication, allowing customers to view their energy use and the City to better monitor customer demand. Load control devices and programmable communicating thermostats help the City manage its peak load and reduce electricity costs for customers. The City is also upgrading and expanding its distribution automation equipment, including installation of automated reclosers (feeder switches) and capacitor bank controls. This is expected to improve reliability, reduce operations and maintenance costs, and decrease distribution energy losses.

Smart Grid Features

Communications infrastructure allows two-way communications between the City's data management center and customer meters, as well as distribution monitoring systems. The City is also implementing a 24-mile fiber optic network to support the increased data traffic from the metering and distribution automation systems.

Advanced metering infrastructure includes a system-wide deployment of approximately 12,500 residential and commercial/industrial smart meters. The residential smart meters are home area network compatible for future integration with other in-home devices such as smart appliances. The smart meters will help to reduce meter reading costs by reducing truck rolls and fuel consumption.

Advanced electricity service options include in-home displays and programmable communicating thermostats. Web portals are available to all customers and enable them to view their electricity use, and utilize the in-home energy technologies if they choose.

At-A-Glance

Recipient: City of Wadsworth

State: Ohio

NERC Region: ReliabilityFirst Corporation

Total Budget: \$10,823,539

Federal Share: \$5,411,769

Project Type: Integrated and/or Crosscutting Systems

Equipment

- 12,192 Smart Meters
- AMI Communication Systems
- 6,000 In-Home Displays/Energy Management Systems
- 3,000 Programmable Communicating Thermostats
- Customer Systems for 12,500 customers
 - Home Area Networks
 - Web Portal Access
 - Direct Load Control Devices
- Distribution System Automation/Upgrade for of 16 Circuits
 - Distribution Management Systems
 - Communications Equipment/SCADA
 - Automated Feeder Switches
 - Automated Reclosers
 - Capacitor Automation Equipment
 - Regulator Automation Equipment

Advanced Pricing Programs

- Time-of-Use Pricing

Targeted Benefits

- Deferred investment in Generation
- Improved Electric Service Reliability and Power Quality
- Reduced Costs from Equipment Failures, Distribution Line Losses, and Theft
- Reduced Electricity Costs for Customers
- Reduced Greenhouse Gas and Criteria Pollutant Emissions
- Reduced Meter Reading Costs
- Reduced Operating and Maintenance Costs
- Reduced Truck Fleet Fuel Usage

City of Wadsworth *(continued)*

Direct load control devices include load control relays connected to the home area networks and the smart meters. These devices enable the City to control certain appliances in exchange for rebates or electricity price reductions. The City plans to use these devices to limit its peak load and defer investment in distribution capacity.

Advanced pricing programs are being evaluated for implementation after the AMI deployment is complete.

Distribution automation systems include automated feeder switches, automated capacitor bank controls, and a distribution management system. These assets improve distribution system reliability and operational efficiency.

Distribution system energy efficiency improvements can be realized using the automated capacitor banks to improve voltage regulation and power factor, reducing energy losses on the distribution system.

Key Milestones

Key Milestones	Target Dates
AMI assets deployment begins	Q3 2010
Distribution automation asset deployment begins	Q4 2011
AMI asset deployment ends	Q1 2012
DA asset deployment ends	Q2 2013

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